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Operations and Services
Performance, NWSPD 10-16

POST-STORM DATA ACQUISITION

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SUMMARY OF REVISIONS: This directive supercedes NWS Instruction 10-1604, Post-Storm Data Acquisition, dated January 6, 2003.

1. Deleted Section 3.7, Civil Air Patrol (CAP), and removed all references to CAP throughout the document. Use of CAP is prohibited unless or until a new MOU with the CAP/USAF is established.

2. Modified Section 4.0, Deployment, to add PSDA flight sources (i.e., gift flights, charter flights, and NWS Designated Pilot Program) and add the requirement that PSDA personnel carry blanket travel orders with them in the field.

3. Added new Section 4.1, Procedures for Accepting Gift Flights.

4. Modified Section 7.0, Determining Tornado F-Scale, to include a reference about "A Guide to F-Scale Damage Assessment."

5. Deleted Appendix A - Glossary of Terms due to redundancy (already included in NWSI 10-1603, Significant Event Reporting).

signed by July 2, 2004
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Director, Office of Climate,
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Post-Storm Data Acquisition

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1. Overview. The Post-Storm Data Acquisition (PSDA) activity includes the acquisition and assembly of highly perishable data necessary for accurate post-event analysis. It requires the rapid deployment of trained teams following the event to gather damage evidence, e.g., storm debris damage patterns, that can be used to accurately identify and describe the event. In cases of prolonged events, it may be appropriate to collect data during the event.

Information gained from PSDA enables the NWS to increase the knowledge of extreme events, learn how to better use existing equipment, improve NWS warning programs, and provide accurate storm damage information and F-Scale/Saffir-Simpson Scale ratings to the news media and academia. During long-duration events, such as flooding, data acquisition and overflights may be valuable to both document the event and to enhance ongoing forecast services.

For the purposes of this instruction, PSDA applies NWS activities that are a subset of the interagency PSDA effort coordinated by the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM). The level of detail, and the efforts and the processes described here, apply only to the NWS and its component offices.

2. Scope. The procedures outlined here apply only to NWS participation in the PSDA process, as described in the National PSDA Plan. These procedures apply in all 50 states, the Commonwealth of Puerto Rico, U.S. Virgin Islands, Guam, American Samoa, Republic of Marshall Islands, Federated States of Micronesia, Republic of Palau, and the Commonwealth of the Northern Mariana Islands. This section defines the role of the NWS and coordination procedures between the NWS and agencies participating in the acquisition of post-storm environmental data. This activity is one of many Federal missions undertaken in the overall response and recovery process that follows a significant hydrometeorological event. For example, the U.S. Geological Survey has primary responsibility for collecting post-storm hydrologic data (high water marks, discharge amounts, etc.).

3. Organizational Roles.

3.1 Office of Climate, Water, and Weather Services (OCWWS). When OCWWS is advised of a significant hydrological or meteorological event, the OCWWS (NWS) representative to the OFCM's Working Group for Post-Storm Data Acquisition (WG/PSDA) coordinates with the affected Region(s) and National Centers for Environmental Prediction (NCEP) Service Center(s) to determine if the NWS should field personnel as part of a PSDA Quick Response Team (QRT). The composition of the QRT will be determined by the Regions in collaboration with OCWWS and NCEP.

Consideration for fielding a QRT includes:

- tornado or wind damage possibly greater than F3,
- large number of deaths,
- catastrophic damage,
- profound coastal or inland flooding.
- scientific interest

The NWS WG/PSDA representative then:

_ informs the Assistant Administrator for Weather Services of the event; and,

_ advises the WG/PSDA Chair the NWS will deploy personnel to the affected area and request the Chair to notify the other Federal OFCM representatives.

NWS funds activities according to procedures defined in the National PSDA Plan.

3.2 Regional Headquarters. Each region will ensure timely notification of significant hydrometeorological events to OCWWS and recommend whether damage surveys can be conducted by the local office, or whether this should be elevated to the national OFCM PSDA process. The Region(s) coordinate with the impacted Weather Forecast Office(s) WFO(s) to ensure NWS personnel, supporting the PSDA QRT are dispatched to the disaster area(s), maintain close contact with the WFO, and assist in coordinating with local and state officials in gaining access to the disaster area(s).

3.3 Local Offices. Local offices initiate a "first review" of an significant extreme hydrometeorological event. In a "first review," the local Meteorologist in Charge (MIC) or their designated representative goes to the site, surveys the damage, and obtains overflight capabilities through contacts with state or county police, national guard, and other local resources. If they believe the situation is of national importance (e.g., a service assessment team may be fielded or the survey of the damage will have significant scientific interest), they should request their Region to recommend the activation of an OFCM PSDA QRT. If emergency management personnel or media coverage indicates an extreme event (e.g., F4 or F5 tornado, catastrophic damage, or large number of deaths) the MIC should notify region about possible activation of a OFCM PSDA QRT prior to completing a site survey.

3.4 National Service Centers. NCEP Service Centers (and the Central Pacific Hurricane Center through the Director, Pacific Region) may request NWS support for an OFCM PSDA QRT deployment through OCWWS.

3.5 River Forecast Centers (RFCs). RFCs may request an OFCM PSDA QRT through their Regions. RFC requests typically focus on information about the current status of ongoing flooding, such as areas inundated and locations of levee failures, as well as on the significance of the event to their respective program.

3.6 Office of the Federal Coordinator for Meteorological Services and Supporting Research. The OFCM maintains the National PSDA Plan and coordinates interagency PSDA efforts.

4. Deployment. The local MIC or designee should initiate post-storm data collection within 12 hours (or less) following notification of a significant hydrometeorological event. WFO personnel deployed for PSDA activities should take a completed DOC Form CD-29 Blanket (no cost order) Travel Order with them in the field. The MIC or designee should identify the source of a flight to support PSDA activities as soon as possible. A gift flight is one that is conducted at no cost to the NWS. Possible cooperative sources include local/county/state police helicopters, other federal agency aircraft, military aircraft, etc. If possible, WFOs should coordinate PSDA flights with their respective Regional Offices prior to taking the flight.

If a gift flight is not possible, and it is deemed necessary that a PSDA flight is still required, WFOs may charter a flight or use the NWS Designated Pilot Program (NWSI 10-808). http://www.nws.noaa.gov/directives/010/pd01008008b.pdf For a OFCM PSDA QRT, the NWS representative to the WG/PSDA will work with the affected Regional office, local offices, the OFCM and the Chair of the OFCM WG/PSDA to ensure the PSDA QRT wind damage expert reports to the damage area as soon as practicable following the event.

4.1 Procedures for Accepting Gift Flights. The local MIC or designee should identify sources for potential gift flights prior to a severe weather event. PSDA personnel accepting a gift flight must complete DOC Form CD-210, Record of Gift or Bequest, http://www.osec.doc.gov/forms/pdf/cd210fll.pdf and if possible, have it signed by the MIC prior to the flight. If circumstances prevent personnel from obtaining MIC authorization prior to the acceptance of the gift, they may take the flight and have the MIC retroactively sign the CD-210.

WFO MIC's have the authority to sign the CD-210 in Block 5. If the gift is less than $25,000.00 a signature is not required in Block 6 of the form.

WFO's will ensure that, within 30 days of accepting a gift or bequest, the completed CD-210 is sent to their respective finance and accounting office. In-kind donations will also be reported. The CD-210 will show the value of each gift or bequest accepted, including that of in-kind donations. A copy of the completed CD-210 should be kept at the local WFO for the record. Copies of the CD-210 should also be faxed to each respective Regional WCM and the National WCM Program Manager at (301) 713-1598.

Instructions for accepting gifts are outlined in DOC Departmental Administrative Order (DAO) 203-9, Gifts and Bequest, at: http://dms.osec.doc.gov/cgi-bin/doit.cgi?205:112:1 Section 10 of the DAO provides specific guidance on processing the Form CD-210.

5. Reporting and Documentation Process. Personnel representing the NWS portion of the OFCM PSDA QRT should create a report and analysis map as soon as possible after data collection to satisfy NWS requirements, and to provide input to service assessment reports. A preliminary report and mapped analysis is due to the NWS representative of the WG/PSDA two weeks following the completion of the data/information collection. The final report, graphics, and mapped analyses should be completed within 60 days of the original deployment. The contents of both preliminary and final reports are outlined in Sections 5.1 and 5.2.

5.1 NWS Report Content Outline. Each report should include the following, as appropriate:

- event description and its impact;
- event analysis; and
- description of phenomena, such as:

  - tornadoes, to include path length, path width, begin/ending date and time, and F-scale, as required;
  - hurricanes/typhoons, to include the Saffir-Simpson scale, first and second wind speed and direction, and of maximum winds, as required;
  - storm surge indicating the maximum surge height, and inundation areas; and,
  - reaches of rivers affected, high water marks, levee failures.

5.2 Mapped Analysis. Each analysis should graphically include, as appropriate:

- tornadoes, to include path length, path width, begin/ending date and time, and F-scale, as required;
- hurricanes/typhoons, first and second wind speed and direction, and isopleths of maximum winds, as required;
- storm surge indicating the maximum surge height, and inundation areas, and high water marks, as required; and
- depiction of river reaches and areas of inundation.

6. Report Distribution. At the service assessment team leader's discretion, the PSDA report may be attached to or integrated into the service assessment report. All reports will be posted on the OCWWS Web site at: http://www.nws.noaa.gov/om/data/stormdata.html.

The NWS WG/PSDA representative will e-mail appropriate interests to notify them of the report's availability.

7. Determining Tornado F-scale. After a tornado, there is considerable public and media interest in an assessment of the tornado's intensity including maximum wind speeds. WFOs, service assessment teams, and PSDA QRTs must exercise caution in assigning intensity ratings until all information is received and analyzed. This is especially true when damage is extreme or a high number of casualties has occurred. To ensure the highest level of accuracy in the final F-scale rating, the following process should be followed:

- If a WFO observes tornado damage potentially greater than F3 or is notified of extreme damage, the WFO will request a QRT through their regional headquarters;

- Until a final F-scale is determined, all references to the event will be characterized as "**potentially greater than F3**;"

- OCWWS will maintain an active list of recognized wind damage experts around the country willing to support a QRT; and,

- Regional Headquarters personnel will contact one of the listed wind damage experts and provide them with logistical information about the affected WFO. A list of wind damage experts is included as Appendix A of the NWS Quick Response Team Operational Procedures distributed by OCWWS to all Regional Headquarters in December 2002.

Note: Other NWS personnel not on the QRT list can be considered as wind damage experts and serve on a QRT, if they demonstrate extensive PSDA experience and are recommended as a National Authority by their Regional Office.

(1) Where no NWS service assessment or PSDA QRT is deployed, the WFO serving the affected area determines the F-scale.

(2) If a QRT is deployed, the QRT will determine that final rating for all suspected F4 and F5 tornadoes utilizing input from local and/or surrounding WFOs. The local MIC, or designee of the affected area, will provide the official F-Scale rating to the public.

(3) Once a final F-scale determination is made, all personnel will adhere to the rating.

Detailed information on F-scale assessment, and differentiation between tornado and straight-line wind damage can be found in "A Guide to F-Scale Damage Assessment (April 2003) located on the WCM Resource Center web site at: http://meted.ucar.edu/resource/wcm and in NOAA

Technical Memorandum NWS SR-146 titled "A Guide For Conducting Convective Windstorm Surveys" available at: http://www.srh.noaa.gov/ssd/techmemo/sr146.pdf

7.1 Training in F-scale Determination. Each Region should conduct yearly refresher training on F-scale wind determination. Relevant parts of the Warning Coordination Meteorologist Training Course at the NWSTC should be conducted by a wind engineer or someone recognized as an expert on F-scale wind determination.